

TELEPHONE

AND DATA TRANSMITTING METHOD FOR TELEPHONE

BACKGROUND OF THE INVENTION

Field of the Invention

5 The present invention generally relates to a telephone and a data transmitting method for the telephone, and more particularly to a telephone that transmits data received through a transmitting provider to an apparatus by wireless and a data transmitting method for the telephone.

Description of Related Art

10 Japanese Patent Provisional Publication No. 7-219967 discloses an image searching apparatus that receives and displays still images and obtains a desired image selected from the still images. Japanese Patent Provisional Publication No. 10-215397 discloses a digital electronic camera that displays index images and receives a desired image selected from the index images.

15 Japanese Patent Provisional Publication No. 10-126565 discloses a connecting device that connects apparatuses such as a camera and a scanner and a terminal with a memory card, cables and a wireless communicating device. Japanese Patent Provisional Publication No. 8-88841 discloses a TV cellular phone that compresses an obtained image and transmits the compressed image to
20 an apparatus, which displays the image.

 In recent years, cellular phones have been developed, and they are capable of inputting and outputting character data and simple image data. Also, digital cameras and digital color printers are now being widely used, and digital images can be easily inputted and outputted.

However, even a developed cellular phone can not display and store an image of high quality due to its small recording capacity and poor performance.

The image searching apparatus in Japanese Patent Provisional Publication No. 7-219967 and the digital electronic camera in Japanese Patent Provisional Publication No. 10-215397 can not transmit received image data to apparatuses by wireless. The connecting device in Japanese Patent Provisional Publication No. 10-126565 and the TV cellular phone in Japanese Patent Provisional Publication No. 8-88841 only have devices that receive images and transmit the images to transmitting providers.

SUMMARY OF THE INVENTION

The present invention has been developed in view of the above-described circumstances, and has as its object the provision of a telephone and a data transmitting method for the telephone in which a desired apparatus can display and store image, voice or character data received through a transmitting provider.

To achieve the above-described object, the present invention is directed to a telephone that receives data of at least one of an image and characters through a transmitting provider, comprising: a designating device that designates an apparatus to which the received data is to be transmitted; and a wireless communicating device that communicates with the apparatus without the transmitting provider and transmits the data to the apparatus designated by said designating device.

According to the present invention, the telephone comprises the designating device that designates an apparatus to which the received data of an image and/or characters is to be transmitted, and the wireless communicating device that communicates with the apparatus without the transmitting provider and transmits the data to the apparatus designated by the designating device.

Thus, the desired apparatus can display or store the data received through the transmitting provider.

BRIEF DESCRIPTION OF THE DRAWINGS

The nature of this invention, as well as other objects and advantages thereof, will be explained in the following with reference to the accompanying drawings, in which like reference characters designate the same or similar parts throughout the figures and wherein:

Fig. 1 is an outside view showing a telephone to which the present invention is applied;

Fig. 2 is a block diagram showing a structure of the telephone in Fig. 1;

Fig. 3 is a diagram showing a data transmitting method for the telephone in which the telephone receives and transmits data; and

Fig. 4 is a diagram showing a menu selecting picture displayed in the data transmitting method.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Hereunder the preferred embodiment of the present invention is explained in detail according to the accompanying drawings.

Fig. 1 is an outside view showing a telephone 10 to which the present invention is applied.

As shown in Fig. 1, the telephone 10 comprises an antenna 12 for communicating with a transmitting provider by wireless, a wireless communicating device 14 for communicating with apparatuses by wireless, a displaying device 16 that displays communication information and an image 15, designating devices 18 that designate and select a telephone number and

character, image or voice data and designate an apparatus to which the data is to be outputted, an address or the like, a receiver 20 that outputs voice, and a transmitter 22.

Fig. 2 is a block diagram of the telephone 10 to which the present invention is applied.

As shown in Fig. 2, the telephone 10 comprises a wireless communicating device 24 for communicating with a transmitting provider by wireless, a transmitting and receiving circuit 26, the wireless communicating device 14 for communicating with the apparatuses by wireless, a transmitting and receiving circuit 28, and a transmitting and receiving buffer 30 that temporarily stores data that has been received or is to be transmitted.

The telephone 10 also comprises a CPU 32 that controls the whole telephone 10, a PROM 34 that stores a program for operating the, constants, telephone numbers, addresses and so on, a RAM 36 in which the CPU 32 executes a processing, a D/A converter 38 that converts digital voice data into analog voice data for the receiver 20, and an A/D converter 40 that converts analog voice data inputted from the transmitter 22 into digital voice data.

In the telephone 10, the CPU 32 is connected with circuits including the displaying device 16 and the designating devices 18 through a communicating device composed of bus lines and I/Os to control the circuits.

The wireless communicating device 14 uses a light such as an electric wave, a supersonic wave and an infrared light. In the case of the electric wave, the wireless communicating device 14 may use the Bluetooth. In the case of the infrared light, the wireless communicating device 14 may use the IrDA.

Fig. 3 is a diagram showing the data transmitting method for the telephone 10 in which it receives and transmits data.

Information on an image captured by a camera 42 or image, voice or character data stored in a server 44 is transmitted to a cellular phone 10A by

wireless or wire. The cellular phone 10A and the telephone 10 start communicating with each other through the transmitting provider 46, and the information on the image, voice or character data stored in the camera 42 or the server 44 or index images are transmitted to the telephone 10 through the cellular phone 10A. The telephone 10 receives the information or the index images, and informs the user of the information or the index images by displaying on the displaying device 16. The user designates data to be received and an apparatus to which the data is to be transmitted with the designating devices 18. The telephone 10 receives the designated data through the transmitting provider 46, and outputs the data to the designated apparatus. The apparatus has a displaying device, a recording device or an outputting device, and is a personal computer 48, a camera 50, a printer 52 or the like.

The cellular phone 10A may start communicating with the telephone 10, and the telephone 10 may start communicating with the cellular phone 10A.

The operation of the telephone 10 when it receives the information on the image, voice or character data will now be explained.

When the CPU 32 of the telephone 10 detects that the telephone 10 has received the information on the image, voice or character data, the displaying device 16 displays a menu selecting picture in Fig. 4. In Fig. 4, a cursor is on an item of a "RECEIVE IMAGE" mode, and the telephone 10 receives information on the images if the user designates "SELECT" (not shown) in this state. As shown in Fig. 4, the telephone 10 has other modes, which are a "TRANSMIT IMAGE" mode for transmitting an image, a "RECEIVE MAIL" mode for receiving characters and a "TRANSMIT MAIL" mode for transmitting characters. The telephone 10 may have modes for receiving and transmitting voice.

Then, the user designates an image to be received while looking at the index image and the information on the image such as a file name displayed on

the displaying device in Fig. 16.

The CPU 32 may determine the size of the data to be received and compare it with an available capacity of the RAM 36 or the PROM 34 in the telephone 10, and the data may be stored in the telephone 10 instead of being
5 outputted to an apparatus if possible.

Next, addresses of the apparatuses to which the data is to be transmitted are designated with the designating devices 18, and then the data starts to be transmitted to the designated apparatuses. Since image data, voice data and music data are generally large, the index image is displayed when the image is
10 selected and a title or a file name is displayed when a voice or a mail is selected, and the data is received after the image, voice or character data to be received is selected. After the telephone 10 receives the data through the transmitting provider 46, the data is transmitted to the wireless communicating device 14 through the transmitting and receiving circuit 26, the transmitting and receiving
15 buffer 30 and the transmitting and receiving circuit 28, and outputted to the apparatuses.

The apparatuses that have received the data store, display or print the data.

As described above, the telephone 10 has the wireless communicating
20 device 14 for high-speed-communicating with the apparatuses without the transmitting provider 46, and transmits the data received through the transmitting provider 46 to one or more apparatuses through the wireless communicating device 14, which store, display or print the data. Therefore, the telephone 10 can receive the data and transmit the data to the apparatuses even if the telephone
25 10 can not store the whole data or display the image of high quality due to the small recording capacity or poor performance of the displaying device.

The telephone 10 is a cellular phone that communicates with the transmitting provider 46 by wireless in the embodiment, but the present

invention is not limited to this. The present invention may be applied to a personal handy-phone system (PHS) or a wired telephone.

As explained above, the telephone according to the present invention comprises the designating device that designates an apparatus to which the received data of an image and/or characters is to be transmitted, and the wireless communicating device that communicates with the apparatus without the transmitting provider and transmits the data to the apparatus designated by the designating device. Thus, the desired apparatus can display or store the data received through the transmitting provider.

It should be understood, however, that there is no intention to limit the invention to the specific forms disclosed, but on the contrary, the invention is to cover all modifications, alternate constructions and equivalents falling within the spirit and scope of the invention as expressed in the appended claims.